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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,698	12/03/2003	Bruce A. Block	10559-891001 / P17795	8647
20985	7590	07/07/2005	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			KIANNI, KAVEH C	
			ART UNIT	PAPER NUMBER
			2883	

DATE MAILED: 07/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/727,698

Applicant(s)

BLOCK ET AL.

Examiner

Kianni C. Kaveh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 23-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 23-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 0123 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This application contains claims directed to the following patentably distinct species of the claimed invention: I) claims 1-22 directed to a second waveguide formed on said substrate and having a cross section larger than said first waveguide and a refractive index less than said first waveguide, said second waveguide having one waveguide section in which said first waveguide and said mesa are conformingly embedded to place said first waveguide near a center of said second waveguide; II) claims 23-26 directed to said first waveguide core to have a solid section and a hollow section, said hollow section having an opening to conformingly enclose said tapered end section; III) claims 27-30 directed to an input optical coupler to receive said input light beam and a second waveguide to receive light from said input optical coupler, said first waveguide coupled to said input optical coupler to direct light to said second waveguide. Thus, each of the above inventions directed to an invention with at least one different limitation that requires different search than that requires for other inventions.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, none of the claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

During a telephone conversation with MR. Ai on 6/28/05 a provisional election was made without traverse to prosecute the invention of I, claims 1-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 23-30 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claim 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanashima et al. (US 20040141677).

Regarding claims 1-18, Hanashima teaches a device (shown in at least fig. 4-6), comprising: a substrate 11 to support a base 102-1; a first waveguide 104 formed on said base 102 and having one tapered end section which adiabatically transforms an optical mode guided in said first waveguide (see at least fig. 6, item transition waveguide tapered end which adiabatically changes mode such as shown in

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at least fig. 1.; see also parag. 0081, in which the mode/spot-size changes as light transmitted from the core/waveguide 104 through the second waveguide/cladding 103); and a second waveguide 103 formed on said substrate 102 and having a cross section larger than said first waveguide 104 and a refractive index less than said first waveguide 104 (since waveguide/core 103 acts as a cladding for waveguide 104 has lower refractive index than waveguide 104), said second waveguide 103 having one waveguide section in which said first waveguide 104 and said base 102 are conformingly embedded to place said first waveguide 104 near a center of said second waveguide 103.

Hanashima further teaches wherein the above waveguides and/or substrate comprise silicon and/or glass and/or polymer (see at least parag. 0069, 0076, 0077).

However, Hanashima does not explicitly teach wherein the above base is a mesa and wherein the above waveguides and/or substrate comprise amorphous silicon and/or silicon nitride/carbide, and/or titanium oxide and/or fluorinated polyimide acrylate, and/or polymethyl methacrylate (PMMA), and/or polysiloxane silicon oxynitride, and/or titanium oxide, and/or semiconductor material, and/or quartz. It is obvious/well known to those of ordinary skill in the art that a material used as a support material having a flat top surface with sidewalls is/known-as a mesa, and that the essential elements Hanashima used for construction of the device can be modified by an ordinary skill in the art by adding or using different substances in which can perform the same function since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a

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matter of obvious design choice. *In re Leshin*, 125 USPQ 416, and since using such material(s) would reduce diffraction loss in the optical device (parag. 008-009).

Regarding claim 19-22, Hanashima further teaches wherein said tapered end section has a cross section that gradually increases/decreases in a direction towards a distal end of said tapered end section (shown in at least fig. 14, items 104); a cladding layer 103 formed on said substrate 11, and wherein said mesa/base 102 is formed in said cladding layer 103; wherein said substrate 11 is made from silicon and said cladding layer comprises a silicon oxide material (see parag. 0069 and 0092).

Citation of Relevant Prior Art

Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Lee 6870987

Lee 20040037497

Mueller 5153935

Stegmueller 5199092

Lee 6697551

Zhou et al. 20030044118

Little WO 2003044580

(also prior art IDS provided by the applicant relevant to at least claim 1)

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or:

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.



K. Cyrus Kianni
Primary Patent Examiner
Group Art Unit 2883

July 5, 2005